



DEPARTMENT OF TRANSPORTATION

Federal Aviation Administration

14 CFR Part 39

[Docket No. FAA-2022-0295; Project Identifier MCAI-2021-00840-R; Amendment 39-22100; AD 2022-13-14]

RIN 2120-AA64

Airworthiness Directives; Airbus Helicopters

AGENCY: Federal Aviation Administration (FAA), DOT.

ACTION: Final rule.

SUMMARY: The FAA is adopting a new airworthiness directive (AD) for all Airbus Helicopters Model AS-365N2, AS 365 N3, EC 155B, EC155B1, and SA-365N1 helicopters. This AD was prompted by a large amount of critical scale particles found on the tail rotor gearbox (TGB) chip detector magnetic plug during an unscheduled check of the TGB. The particles belonged to the double bearing (pitch control rod bearing) installed inside the TGB. This AD requires repetitive inspections of the TGB chip detector for particles, analyzing any particles collected, performing a double bearing washing, repetitive replacements of certain part-numbered double bearings, and corrective actions if necessary, as specified in a European Union Aviation Safety Agency (EASA) AD, which is incorporated by reference. The FAA is issuing this AD to address the unsafe condition on these products.

DATES: This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of a certain publication listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

ADDRESSES: For EASA material incorporated by reference (IBR) in this final rule, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; telephone +49 221 8999 000; email ADs@easa.europa.eu; Internet www.easa.europa.eu. You may find the EASA material on the EASA website at <https://ad.easa.europa.eu>. For Airbus Helicopters

service information identified in this final rule, contact Airbus Helicopters, 2701 N Forum Drive, Grand Prairie, TX 75052; telephone (972) 641-0000 or (800) 232-0323; fax (972) 641-3775; or at <https://www.airbus.com/helicopters/services/technical-support.html>. You may view this material at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110. Service information that is IBRed is also available in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0295.

Examining the AD Docket

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0295; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the EASA AD, any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

FOR FURTHER INFORMATION CONTACT: Andrea Jimenez, Aerospace Engineer, COS Program Management Section, Operational Safety Branch, Compliance & Airworthiness Division, FAA, 1600 Stewart Ave., Suite 410, Westbury, NY 11590; telephone (516) 228-7330; email andrea.jimenez@faa.gov.

SUPPLEMENTARY INFORMATION:

Background

EASA, which is the Technical Agent for the Member States of the European Union, has issued EASA AD 2021-0170, dated July 19, 2021 (EASA AD 2021-0170), to correct an unsafe condition for all Airbus Helicopters (AH), formerly Eurocopter, Eurocopter France, Aerospatiale, Sud Aviation, Model AS 365 N2, AS 365 N3, EC 155 B, EC 155 B1 and SA 365 N1 helicopters.

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all Airbus Helicopters Model AS-365N2, AS 365 N3, EC 155B, EC155B1, and SA-365N1 helicopters. The NPRM published in the

Federal Register on April 11, 2022 (87 FR 21052). The NPRM was prompted by a large amount of critical scale particles found on the TGB chip detector magnetic plug during an unscheduled check of a Model AS 365 N2 helicopter. The NPRM proposed to require repetitive inspections of the TGB chip detector for particles, analyzing any particles collected, performing a double bearing washing, repetitive replacements of certain part-numbered double bearings, and corrective actions if necessary, as specified in EASA AD 2021-0170.

The FAA is issuing this AD to prevent bearing degradation and subsequent failure. The unsafe condition, if not addressed, could result in loss of yaw control of the helicopter. See EASA AD 2021-0170 for additional background information.

Discussion of Final Airworthiness Directive

Comments

The FAA received a comment from an anonymous commenter. The commenter did not request any changes to the NPRM or to the determination of costs.

Conclusion

These helicopters have been approved by EASA and are approved for operation in the United States. Pursuant to the FAA's bilateral agreement with the European Union, EASA has notified the FAA about the unsafe condition described in its AD. The FAA reviewed the relevant data, considered the comments received, and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these helicopters. This AD is adopted as proposed in the NPRM.

Related Service Information Under 1 CFR Part 51

EASA AD 2021-0170 requires analyzing any particles collected during close monitoring or during any required inspections, repetitive inspections of the TGB chip detector for particles, performing a double bearing washing, and corrective actions. Corrective actions include removing an affected TGB and repairing or replacing that TGB, sending affected parts and certain information to the manufacturer, replacing a TGB chip detector or TGB electrical magnetic plug, and replacing an affected O-ring and

double bearing. EASA AD 2021-0170 also requires performing a double bearing washing or performing a metallurgical analysis based on inspection results.

EASA AD 2021-0170 also requires for any double bearing part number (P/N) 704A33-651-245 or 704A33-651-246, installed on any TGB P/N 365A33-6005-09, before exceeding 610 flight hours (FH) since first installation, or within 110 FH after October 28, 2019 (the effective date of EASA AD 2019-0267-E, dated October 25, 2019), whichever occurs later, and thereafter at intervals not to exceed 500 FH, replacing the affected double bearing with a serviceable one. EASA AD 2021-0170 allows double bearing part number P/N 704A33-651-245 or 704A33-651-246 to be installed, provided it has never been installed on a helicopter and it is inspected as required by EASA AD 2021-0170. Finally, EASA AD 2021-0170 allows TGB P/N 365A33-6005-09 to be installed, provided it has a serviceable double bearing installed that is inspected as required by EASA AD 2021-0170.

This material is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in the ADDRESSES section.

Other Related Service Information

The FAA reviewed Airbus Helicopters Emergency Alert Service Bulletin (EASB) No. 01.00.24 for non FAA-type certificated military Model AS565MA, MB, MBe, SA, SB, and UB helicopters; EASB No. 01.00.71 for Model AS365N1, N2, and N3 helicopters, and non FAA-type certificated military Model AS365F, Fi, K, and K2 helicopters; EASB No. 01.31 for non FAA-type certificated military Model SA366GA helicopters; and EASB No. 04A016 for Model EC155B and B1 helicopters, each Revision 3 and dated June 14, 2021 (co-published as one document).

This service information specifies procedures to inspect the TGB chip detector for particles, analyze and define the particles by performing a metallurgical analysis, perform a washing of the double bearing, replace the double bearing, and send certain information and affected parts to the manufacturer.

Interim Action

The FAA considers this AD to be an interim action. If final action is later

identified, the FAA might consider further rulemaking.

Differences Between this AD and EASA AD 2021-0170

Service information referenced in EASA AD 2021-0170 specifies sending compliance forms, and certain parts to the manufacturer; this AD does not. Service information referenced in EASA AD 2021-0170 specifies contacting Airbus Helicopters for approved repairs or corrective actions if certain discrepancies are found, whereas this AD requires accomplishing repairs or corrective actions using a method approved by the Manager, General Aviation and Rotorcraft Section, International Validation Branch, FAA; or EASA; or Airbus Helicopters' EASA Design Organization Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature.

Costs of Compliance

The FAA estimates that this AD affects 53 helicopters of U.S. Registry. Labor rates are estimated at \$85 per work-hour. Based on these numbers, the FAA estimates the following costs to comply with this AD.

Analyzing any particles collected during close monitoring takes about 1 work-hour for an estimated cost of \$85 per inspection and up to \$4,505 for the U.S. fleet.

Replacing a double bearing takes about 16 work-hours and parts cost about \$1,620 for an estimated cost of \$2,980 per replacement and \$157,940 for the U.S. fleet.

Inspecting the TGB chip detector for particles takes about 1 work-hour for an estimated cost of \$85 per inspection and \$4,505 for the U.S. fleet.

Performing a double bearing washing takes about 8 work-hours for an estimated cost of \$680 per helicopter.

The FAA estimates the following costs to do any necessary on-condition replacements that are required based on the results of the inspection. The agency has no way of determining the number of aircraft that might need these on-condition replacements:

Analyzing collected particles takes about 1 work-hour for an estimated cost of \$85 per helicopter.

Replacing a double bearing takes about 16 work-hours and parts cost about \$1,620 for an estimated cost of \$2,980 per bearing.

Replacing a TGB chip detector or TGB electrical magnetic plug takes about 1 work-hour and parts cost about \$900 for an estimated cost of \$985 per part replacement.

Replacing an O-ring takes about 1 work-hour and parts cost about \$100 for an estimated cost of \$185 per O-ring.

Replacing a TGB takes about 8 work-hours and parts cost about \$155,302 for an estimated cost of \$155,982 per replacement.

The FAA has received no definitive data for the repair cost of a TGB.

Authority for this Rulemaking

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

Regulatory Findings

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and
- (3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

List of Subjects in 14 CFR Part 39

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

The Amendment

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

PART 39 - AIRWORTHINESS DIRECTIVES

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

§ 39.13 [Amended]

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

2022-13-14 Airbus Helicopters: Amendment 39-22100; Docket No. FAA-2022-0295; Project Identifier MCAI-2021-00840-R.

(a) Effective Date

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

(b) Affected ADs

None.

(c) Applicability

This AD applies to all Airbus Helicopters Model AS-365N2, AS 365 N3, EC 155B, EC155B1, and SA-365N1 helicopters, certificated in any category.

(d) Subject

Joint Aircraft Service Component (JASC) Code 6500, Tail Rotor Drive System.

(e) Unsafe Condition

This AD was prompted by a large amount of critical scale particles found on the tail rotor gearbox (TGB) chip detector magnetic plug during an unscheduled check of the TGB. The particles belonged to the double bearing (pitch control rod bearing) installed inside the TGB. The FAA is issuing this AD to prevent bearing degradation and subsequent failure. The unsafe condition, if not addressed, could result in loss of yaw control of the helicopter.

(f) Compliance

Comply with this AD within the compliance times specified, unless already done.

(g) Requirements

Except as specified in paragraph (h) of this AD: Comply with all required actions and compliance times specified in, and in accordance with, European Union Aviation Safety Agency (EASA) AD 2021-0170, dated July 19, 2021 (EASA AD 2021-0170).

(h) Exceptions to EASA AD 2021-0170

(1) Where EASA AD 2021-0170 requires compliance in terms of flight hours (FH), this AD requires using hours time-in-service (TIS).

(2) Where EASA AD 2021-0170 refers to the effective dates specified in paragraphs (h)(2)(i) through (iii) of this AD, this AD requires using the effective date of this AD.

(i) October 28, 2019 (the effective date of EASA AD 2019-0267-E, dated October 25, 2019).

(ii) November 19, 2019 (the effective date of EASA AD 2019-0267R1, dated November 12, 2019, and corrected November 13, 2019).

(iii) The effective date of EASA AD 2021-0170.

(3) Where EASA AD 2021-0170 requires actions during each “after last flight (ALF) of the day inspection” or “ALF,” this AD requires those actions before the first flight of each day.

(4) Where paragraph (7) of EASA AD 2021-0170 specifies “any discrepancy,” for this AD discrepancies include the presence of particles and other conditions such as abrasions, particles that consist of any scale, chip, flake, splinter, M50 particles, magnetic abrasion dust, or other particles other than cotter pin fragments, pieces of lock wire, swarf, or miscellaneous non-metallic waste.

(5) Where paragraph (8) of EASA AD 2021-0170 specifies for Group 2 helicopters, the first replacement of the affected part must be accomplished not later than December 31, 2021, this AD requires, for Group 2 helicopters, the first replacement of the affected part as defined in EASA AD 2021-0170 must be accomplished within 5 months after the effective date of this AD.

(6) Where any work card referenced in the service information referenced in EASA AD 2021-0170 specifies “if there is an anomaly, replace the chip detector,” or “if

there is an anomaly, replace the TGB electrical magnetic plug,” for this AD an anomaly may be indicated by the magnetic component of the TGB chip detector or the TGB electrical magnetic plug not being magnetized. If there is an anomaly, this AD requires before further flight, removing from service the TGB chip detector or the TGB electrical magnetic plug as applicable to your model helicopter.

(7) Where any work card referenced in the service information referenced in EASA AD 2021-0170 specifies “make sure that the chip detector is in good condition,” or “make sure that the TGB electrical magnetic plug is in good condition,” as applicable to your model helicopter, for this AD “good condition” is indicated when there are no signs of wear on the locking systems (including wear on the bayonets, and slotted tubes). If there are any signs of wear on the locking systems, this AD requires before further flight, removing from service the TGB chip detector or the TGB magnetic electrical magnetic plug as applicable to your model helicopter.

(8) Where any work card referenced in the service information referenced in EASA AD 2021-0170 specifies “if necessary, replace the O-rings,” this AD requires before further flight, removing any affected O-ring from service.

(9) Where the service information referenced in EASA AD 2021-0170 specifies to return certain parts to the manufacturer, including for repair, this AD does not require returning parts to the manufacturer, however, this AD does require before further flight, repair done in accordance with a method approved by the Manager, General Aviation and Rotorcraft Section, International Validation Branch, FAA; or EASA; or Airbus Helicopters' EASA Design Organization Approval (DOA). If approved by the DOA, the approval must include the DOA-authorized signature.

(10) Where the service information referenced in EASA AD 2021-0170 specifies to remove the TGB as per technical documentation, or remove the concerned module(s), this AD requires before further flight, removing the TGB and replacing it with an airworthy part, or repairing the TGB in accordance with a method approved by the Manager, General Aviation & Rotorcraft Section, International Validation Branch, FAA; or EASA; or Airbus Helicopters' EASA DOA. If approved by the DOA, the approval must include the DOA-authorized signature.

(11) Where the service information referenced in EASA AD 2021-0170 specifies if the collected particles cannot be clearly defined, perform a metallurgical analysis and contact Airbus Helicopters, before continuing flights, this AD does require before further flight, characterization of the particles collected, and performing a metallurgical analysis for any particles collected using a method in accordance with FAA-approved procedures. However, this AD does not require contacting the manufacturer to determine the characterization of the particles collected.

(12) Where the service information or any work card referenced in EASA AD 2021-0170 specifies to do the actions identified in paragraphs (h)(12)(i) through (v) of this AD, this AD does not include those requirements.

(i) Complete Appendix 4.A and 4.B.

(ii) Comply with paragraph 2.D.

(iii) Send all collected particles and metallurgical analysis report to depot level maintenance facility with the concerned module.

(iv) Inform EST using chip detection tracking sheet.

(v) Complete the “Particle Detection” follow up sheet.

(13) Where a work card referenced in the service information referenced in EASA AD 2021-0170 specifies “send all oversized particles for analysis and wait for results before continuing flight,” this AD does not require sending particles for analysis, however this AD does require before further flight, analyzing the particles using a method in accordance with FAA-approved procedures.

(14) This AD does not mandate compliance with the “Remarks” section of EASA AD 2021-0170.

(15) Where paragraph (7) of EASA AD 2021-0170 specifies to accomplish the applicable corrective actions “within the compliance time as identified in the applicable ASB,” this AD requires accomplishing corrective actions before further flight.

(16) Where paragraph (1) of EASA AD 2021-0170 specifies “within the applicable compliance time as identified in the close monitoring and until completion of the close monitoring,” this AD requires a close monitoring compliance time of a total of 25 hours TIS.

(i) No Reporting Requirement

Although the service information referenced in EASA AD 2021-0170 specifies to submit certain information to the manufacturer, this AD does not include that requirement.

(j) Special Flight Permit

Special flight permits may be issued in accordance with 14 CFR 21.197 and 21.199, provided no passengers are onboard.

(k) Alternative Methods of Compliance (AMOCs)

(1) The Manager, International Validation Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the International Validation Branch, send it to the attention of the person identified in paragraph (l) of this AD. Information may be emailed to: 9-AVS-AIR-730-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

(l) Related Information

For more information about this AD, contact Andrea Jimenez, Aerospace Engineer, COS Program Management Section, Operational Safety Branch, Compliance & Airworthiness Division, FAA, 1600 Stewart Ave., Suite 410, Westbury, NY 11590; telephone (516) 228-7330; email andrea.jimenez@faa.gov.

(m) Material Incorporated by Reference

(1) The Director of the Federal Register approved the incorporation by reference of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless this AD specifies otherwise.

(i) European Union Aviation Safety Agency (EASA) AD 2021-0170, dated July 19, 2021.

(ii) [Reserved]

(3) For EASA AD 2021-0170, contact EASA, Konrad-Adenauer-Ufer 3, 50668 Cologne, Germany; telephone +49 221 8999 000; email ADs@easa.europa.eu; Internet www.easa.europa.eu. You may find the EASA material on the EASA website at <https://ad.easa.europa.eu>.

(4) You may view this service information at the FAA, Office of the Regional Counsel, Southwest Region, 10101 Hillwood Pkwy., Room 6N-321, Fort Worth, TX 76177. For information on the availability of this material at the FAA, call (817) 222-5110. This material may be found in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2022-0295.

(5) You may view this material that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email fr.inspection@nara.gov, or go to:

<https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on June 16, 2022.

Christina Underwood, Acting Director,
Compliance & Airworthiness Division,
Aircraft Certification Service.

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